

Amendment to the Claims

1.(Original) A dielectric barrier discharge lamp lighting device for driving a dielectric barrier discharge lamp having an inner electrode and an external electrode, comprising:

a transformer that includes a primary coil and a secondary coil, and supplies a driving voltage to the dielectric barrier discharge lamp from the secondary coil; and

a driving circuit that controls an input voltage to the transformer to supply the driving voltage with a driving frequency f_d to the dielectric barrier discharge lamp,

wherein a self-resonant frequency f_r of the secondary coil, which is measured with the primary coil of the transformer being open, is equal to the driving frequency f_d or a frequency in the vicinity of the driving frequency f_d .

2.(Original) The dielectric barrier discharge lamp lighting device according to claim 1, wherein the self-resonant frequency f_r is set to satisfy $0.9f_d \leq f_r \leq 1.3f_d$.

3.(Original) The dielectric barrier discharge lamp lighting device according to claim 1, wherein the self-resonant frequency f_r is set to satisfy $0.95f_d \leq f_r \leq 1.25f_d$.

4.(Original) The dielectric barrier discharge lamp lighting device according to claim 1, wherein the self-resonant frequency f_r is set to satisfy $1.0f_d \leq f_r \leq 1.2f_d$.

5.(Previously Presented) The dielectric barrier discharge lamp lighting device according to claim 1, wherein the driving voltage is a voltage having a substantially rectangular waveform.

6.(Previously Presented) The dielectric barrier discharge lamp lighting device according to claim 1, wherein the driving circuit includes a push-pull inverter.

7.(Previously Presented) The dielectric barrier discharge lamp lighting device according to claim 1, wherein the driving circuit includes a half-bridge inverter.